Resolution 17-1R1

PROTECTION OF SPACE SCIENCE SERVICES FROM TERRESTRIAL SERVICE SYSTEMS IN THE BANDS 2025-2110 MHz AND 2200-2290 MHz

The SFCG,

CONSIDERING

a) that WARC-92 allocated the bands 2025-2110 MHz and 2200-2290 MHz to the space research, Earth exploration-satellite and space operation services (collectively, the space science services), on a co-primary basis with existing allocations to the fixed and mobile services;

b) that these international allocations were made in recognition of the critical reliance of space science systems on access to these bands, and the substantial capital investment in the ground-based and space-based infrastructure by the space agencies of countries representing between them more than 80% of the world's population;

c) that Resolution 211 (WARC-92) recognized the difficulty of sharing between certain types of mobile systems and the space science services and requested the CCIR to study the matter;

d) that RR S5.391 and Recommendation ITU-R SA.1154 stipulates the provisions required to protect space science services from the emissions of mobile service systems in this frequency range, indicates that sharing with certain low density mobile systems is feasible, and states that high population density mobile systems (such as PCS, GMCS, IMT-2000) cannot share these bands with space science systems;

e) that at WARC-92 sharing between the fixed service and the space science services was considered feasible based on long term successful experience with existing systems and their corresponding density within the shared bands;

f) that large numbers of fixed service systems have been displaced into these 2 GHz bands to accommodate new (mobile service) personal communication systems in adjacent bands;

g) that based on Resolution 113 (WARC-92), which anticipated the needs of fixed service systems to be accommodated in other bands, ITU-R has drawn up new channelisation plans in Recommendation ITU-R F.1098 which encompass the 2025-2110 MHz and 2200-2290 MHz bands;

h) that the investment in compatible fixed and mobile service systems in these bands in both developed and developing countries is significant;

i) that Recommendations ITU-R F.1147, F.1148, SA.1273, SA.1274, and SA.1275 stipulate the conditions necessary to ensure a stable long-term sharing environment between space science service systems and fixed service systems operating in these frequency bands;

j) that spacecraft of significant mass capable of surviving re-entry, must be controlled to ensure impact occurs in non-populated areas;

RECOGNIZING:

1) that all member space agencies of the SFCG rely heavily upon the availability of the 2025-2110 MHz and 2200-2290 MHz bands to conduct their Cat. A missions, including manned and unmanned missions, fundamental scientific research, observing both the Earth and space environments, and making an expanding contribution to the knowledge base of ecological conditions;

2) that the worldwide capital investment of public funds in the ground-based and space-based elements of the communication networks, the launch, tracking, telemetry, command and control facilities, necessary to support both manned and unmanned endeavors in space is in excess of US $ 70 billion, and is irreversibly dependent on access to these 2 GHz bands;

3) that many administrations are, *inter alia*, implementing revenue-producing methods of apportioning the frequency spectrum;

4) that deliberate, controlled de-orbiting of large mass spacecraft can best be executed relying on communications systems using frequency bands near 2 GHz which provide all-weather, reliable communications characteristics;

RESOLVES

1. that member agencies make their respective administrations aware of the difficulties in sharing with proposed terrestrial system implementations, which may vary from country to country, in the bands 2025-2110 MHz and 2200-2290 MHz;

2. that member agencies urge their respective administrations to take into account:

   a) the significant capital investment in both space science and compatible terrestrial service systems in the 2 GHz bands,

   b) the need for continued access to these frequency bands, by both developed and developing countries, well into the 21st century, and

c) the public safety aspects of the space agencies' responsibility which can be satisfied only through access to these bands.

3. that member agencies urge their respective administrations to take all these factors into account in balancing the public interest when trying to identify viable blocks of spectrum as revenue-producing allocations.